

Ricketts (M. B.)

THE SURGERY
OF
CLEFT ❖ PALATE.

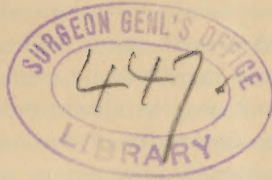
BY

M. B. RICKETTS, M. D.,
CINCINNATI, O.



Read before the Mississippi Valley Dental Society, held at Cincinnati, March, 1891.

TOLEDO, OHIO:
ANDREWS, MYERS & BUSSE, PRINTERS.
1891.



THE SURGERY OF CLEFT PALATE.

BY B. M. RICKETTS, M. D., CINCINNATI, O.

It occurs to me that simple or compound clefts of the palate, either of the soft or hard tissues, whether traumatic or otherwise, are the most interesting of all the oral deformities coming within the domain of the dental surgeon. That these conditions are overcome with great difficulty there can be no question.

That the dentist's skill has deprived many a surgeon of a fee there can be no doubt. But now, that the relation of the two, together with the advance of artistic skill, especially in grafting and transplanting skin, mucous membrane and bone has become so intimate, we cannot feel but that the dentist's work is secondary at least in the majority of cases.

To make the mouth and its anatomical relations the subject for our text, and to review their various deformities by any cause whatever, would make my paper and reports connected therewith voluminous. Indeed too much so, for the recent work in this line has been so great that the slightest review of the literature pertaining to it would consume too much of the time tended for others.

In consequence thereof, I will confine my remarks to the "Surgery of Cleft Palate" with a few suggestions concerning the buccal and labial regions, especially with reference to restoration by grafting. It is difficult to determine just where the work of the dentist ends and where that of the surgeon begins. However, I don't think that either would be more content than the other to have this work reported in a journal on mechanics.

Any part or all of the hard palate may be wanting with or without its soft mucous covering. However, as a rule, when the hard palate is absent in part or in toto the mucous membrane is also wanting, especially is this so when the perpendicular plate of the ethmoid is absent which is frequently the case. When the soft part alone is involved the rent may be in any direction or to any degree, or it may be absent entire.

Where the deformity of the hard palate is due to injury the difficulty of restoration is not so great, as the requisite amount of tissue is, as a rule, present and even in many cases of congenital cleft the proper amount of bone tissue is present, but the edges are inverted so as to pretty well occupy the nasal fossa. In such a condition as this, that portion of the rolled border may be divided by a saw or forceps, then brought down and sutured in normal proximity by means of silver wire, mounted first by a coil and then by a perforated shot well compressed.

TIME FOR OPERATION.—This is of first importance and should not be left unobserved, at this time in our remarks, for many times the success of the operation depends almost entirely upon the age of the patient at the time of operation. We take it for granted that all the cases due to traumatism should be operated upon immediately or as soon after the injury as it is possible. In congenital clefts the most desirable time is within the first two weeks, earlier than the first week if possible.

Mr. Marcy was the first to make a trachæotomy so that the patient might respire while the oral cavity was closed, so that primary union might be secured in a cleft of the soft parts. Although this proved successful and the patient recovered with practically a normal palate the propriety of such a procedure is to be questioned so long as results are secured by other means that answer all practical purposes. True, Mr. Marcy has shown us what can be done, but not why it should be done.

To Thos. H. Manley is due more credit than any American for carrying into use the suggestions of Maurice Collis, of Dublin. In congenital clefts, Mr. Collis says, that the intermaxillary segment may be crowded back into position by fracturing the maxillaries. If the septum refuses to yield a wedge it should be removed at the point of junction of the vomer with the ethmoid. The tuft always contains four teeth, the central and lateral incisors. It is this upon which the shape of the mouth depends.

The wide deviation of the opposing jaws would render the remaining teeth useless so far as mastication is concerned.

By resorting to the foregoing operation, not only is the shape of the mouth retained or rather restored, but the lateral and central incisors are preserved. It may be necessary to chisel away a portion of the adjacent osseous tissues that close proximity of the parts may be accomplished and union secured. In either event the use of silver wire is indispensable and should be used with great care. I have made this operation three times with most gratifying results in two of them. The other failing to unite, sloughed and was lost. The only modification that I offer is in the plan of making taut the wire which is done by a simple coil of wire mounted by a shot through which a hole has been drilled.

This child was injured about one hundred and sixty miles from this city and was operated upon within twenty-three hours from the time of injury and remained in the house about three weeks. There are few general practitioners or surgeons and still fewer dentists who are not familiar with the deformities due to any cause whatever. As to the cause of these clefts there are many interesting features, it undoubtedly takes place sometime within the first six or eight weeks of foetal life, just what the cause is we are not able at present to determine definitely, however, those who have been investigating the subject and paying the most attention to it assure us that it is sometime within the first eight weeks of foetal life. Mr. Ferguson has made some very interesting observations, all of which would require more time than I can give it just now. Now, in order that you may better understand these deformities, and understand what I have to say, and the few suggestions I may offer, I have, with the assistance of an artist, placed on the charts for you these diagrams that we may take them up in regular order, giving you the most common deformities of the hard parts. We have not the time to enter into any special classification other than to classify the procedure of the correction of these deformities as surgical and mechanical.

It is rather remarkable that the majority of clefts are in the female, perhaps 70 per cent.; some authors claim that those persons having cleft palates are sterile, especially women, and others that it is so with men, but we have all known women who

have become mothers, and we have all known such men whom we had every reason to believe were fathers.

Now the most common of these deformities are those where the tuft projects with 1, 2, 3 or 4 incisors, but I have seen cases that show the fallibility of Mr. Collis' rule that the tuft always contains four incisors. I operated upon one of the cases thirteen months ago, the child at the time of operation being five weeks old. I lost the tuft with all my efforts to save it, perhaps it was due to its pedicel being so small that it was not properly nourished. Mr. Collis' operation was the one that should have been made, as the septum could have been divided without any difficulty, and if necessary, the edges pared and forced upon the sides of the superior maxillary bones, perfect coaptation being secured by means of silver wire. I have made this operation and am sorry that it was not made in this case; however, the child made a rapid recovery with practically perfect result and is now alive and of average size for one at that age. One similar case operated upon by Mr. Collis' plan six years ago at the age of five years is alive and doing as well as though the operation had not been required.

When the septum extends to the alveolar process and the tuft extending beyond this with one or more incisors it is almost impossible to save the teeth, especially if the septum is attached at the alveolar process; however, as we are not able always to determine what the result will be, it is our duty to give the subject the benefit of every doubt, but if in a few years these teeth are inefficient and are not capable of prehension or mastication, then it is time to take them out. The absorption of the process may be partial or complete.

The dentists have been doing such excellent work that we are many times in doubt as to whether or not deformities of the cleft palate should be taken out of their hands, so far as mechanical restoration is concerned. Dr. Grant Mollyneaux, a resident of our city and one of your number, has done more than any of your American brethren in a mechanical way to relieve these deformities. It being necessary that the air passages should be lined with epithelium great difficulty has often been encountered in restoring the soft palate with flaps from the cheek or forehead, one operator has suggested and performed the following operation three times, each time failing, while another operator,

of more recent date, had operated once with success. The operation consists in laying the nose entire to either side by a free incision denuding the frontal bone of its integument and periosteum, twisting it upon itself so that the pedicle would not be too tightly compressed crowding it into the nasal cavity, sutured with wire in such a way as to bring the cutaneous surface on the upper side forming the floor of the nasal fossa, while the periosteum forms the roof the mouth. The success of the last operator was undoubtedly due to the fact that he carried with the integument the periosteum. I would not feel justified in placing this operation before you for serious consideration with our present knowledge of these cases and our means of correcting their deformities.

As to the time of operation I think it is conceded that these operations should be made in the first few days of infant life, there are cases where the conditions are such that this may be questioned. Sometimes when we take a child three or four days of age and insert the silver wire or silk worm-gut or even silk or cat-gut, the tissues are so soft that they pull out. But I think the only thing to do is to again give the patient the benefit of the doubt, and while there may be doubt as to its recovery, in the majority of cases it is correct. If they should die we feel that there is not the loss that there would be in allowing the child to reach adult life and assume the responsibilities of such life. Then there are children that fall heirs to property and there are conditions from a medico-legal standpoint, either of which have reasons within themselves for the child living. You all know that there are marriages contracted on the basis of raising children to inherit property. Under these circumstances and on this basis it may be necessary to postpone operative procedures until adult life.

The specimen that I present to you is the cranium, showing the palate at ten years of age. The bones are not completely ossified, in fact the palate bone is almost separate from the palatal process of the superior maxillary bone. Now, as to the silk-worm gut I have referred to, I will say a few words. Like silver it does not become absorbed, it is the substance which composes the angler's pride (fishing string). It is made from the jelly found in the silk worm and is the substance from which the worm spins its silk. It is drawn out in a thread-like manner, treated to a solution of sulphuric acid which hardens it, and put

through various other processes, after which it becomes the substance which you now see. Our own silk worm will not supply a string more than five feet long, while the Asiatic worm gives one as much as thirteen feet in length. As to the mode of bringing the edges together, whether of the hard or soft tissues, I have the means here that I think is better than anything that has been presented to the profession. This coil is one prepared by Mr. Armstrong, of Indianapolis, and called the "Aveling Coil," with which some of you are perhaps familiar. It is a secret process, and yet I am given to understand that it is a compound of silver, platinum and aluminum. It may be used in various things and the substance may be allowed to remain in the flesh indefinitely without giving any serious difficulty.

The instrument that I use in the clefts is what is called a Collin's needle, a French instrument imported, by me five years ago, and which is now becoming quite common, there are twelve needles accompanying it, varying in shape, so that almost any angle may be obtained. The needle once through the tissue and being hollow a silver wire is forced through it by means of a ratchet, pulled out to any desired length, cut off and fastened by one of these coils, and afterwards secured by a perforated shot, the wire being soft silver does not permit of the ratchet running over it but two or three times, so that it is best to use a new wire each time. I did not expect to give you a very lengthy paper, it was merely to bring the subject before you for your consideration and to give you a thought or two as to what is being done in this line by the every day surgeon, at least by those who pay any special attention to these kinds of deformities. I am satisfied that we have in the operation described by Maurice Collis a very effectual means of correcting certain deformities and I shall give it a trial, I hope at a very early date. I should be glad indeed to get the expression of the various members of this society and to hear their criticisms and get what every views that they may have to offer, or suggestions, or what may enable us to get out of the difficulty which we so often encounter in correcting these terrible deformities.

At the age of 5, while sitting in a high chair blowing a tin whistle six or eight inches in length, fell forward to the floor. The tip of the whistle struck just behind the upper incisors, plowing backward, pulling off the hard palate until the line of union of

soft and hard palate was reached, when it was forced up through the soft palate into the post nasal chamber, cutting and tearing its way until the posterior wall of the nasal pharynx stopped its progress. Upon examination a Y-shaped laceration was to be seen pointing forward. The hard palate was found to be penetrated and laceration of soft parts quite severe. All food taken passed upward into the nasal chamber, the liquid portion coming out forward, but the greater portion of the solid food remained in the nasal cavity and soon gave rise to a nasty, foul odor depending upon the subsequent decomposition of it. Chloroform was used as an anæsthetic and silver wire was used as sutures. Considerable difficulty was experienced in finding a needle of proper cure to engage the flaps, as the arch of the hard palate was unusually high. I was finally successful; however, I lost two stitches by sloughing and a second operation was necessary, which gave perfect relief to the child and ended in a perfect cure. Why this tin whistle did not completely detach the bone I am unable to say.

